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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/500,475

07/16/2004

Klaus Krumbholz

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06/06/2006

DENNISON, SCHULTZ, DOUGHERTY & MACDONALD
1727 KING STREET
SUITE 105
ALEXANDRIA, VA 22314

EXAMINER

KOSLOW, CAROL M

ART UNIT

PAPER NUMBER

1755

DATE MAILED: 06/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/500,475

Applicant(s)

KRUMBHOLZ, KLAUS

Examiner

C. Melissa Koslow

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-16 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7/16/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

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The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

The disclosure is objected to because of the following informalities: Me(II) is not defined. It is unclear if Me(II) includes calcium or not. The definition of Me(IV) is unclear. It is unclear if it is limited to CeO₂ and/or SnO₂ only or if it is any of the known Me(VI) ions excluding Zr and Ti. This definition would include Si, which creates confusion as to the actual composition. In the table on page 6, the last line is partially cut off. Appropriate correction is required.

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The temperature and time ranges in claim 9 is not taught in the specification.

In the claims, the narrow phrase or number range after the term "in particular" and have been given no patentable weight. This is because the phrase or number range after the term are examples of the broad term or range and claims are given their broadest interpretation. Applicants may add dependent or independent claims directed to the above narrow phrase or range.

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Claims 1, 3, 4, 6, 8, 9, 11 and 13-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 3 are indefinite since it is unclear if Me(II)O includes CaO , or not. This is because CaO is a Me(II)O compound. If it is part of Me(II)O , then claim 4 is indefinite and improperly dependent on claim 1 since claim 1 limits the total amount of Me(II)O in the glass ceramic to less than 4 wt% and claim 4 teaches the glass ceramic can contain 1-4 wt% CaO .

Claim 1 is indefinite as to what oxides are the claimed Me(IV)O_2 oxides, CeO_2 and/or SnO_2 as it is defined in claims 3 and 4 or any Me(IV)O_2 , excluding SiO_2 , ZrO_2 and TiO_2 .

Claim 6 is indefinite since it is unclear if the amount of CeO_2 to obtain a fluorescent property is also controlled by the limit as to the amount of Me(IV)O_2 in claims 1 or not, since CeO_2 is a Me(IV)O_2 compound. In addition it is unclear how the fused cerium and/or terbium oxide are related to the claimed composition since there is no requirement that these fused oxides are present in the glass ceramic.

Claim 8 is indefinite since the preamble teaches producing the glass-ceramic of claim 1, but step 1 requires mixing the components of claims 2-6, which includes oxides and amounts not in claim 1. In addition, step 6 refers to after drying, but there is no drying step after step 5, the tempering step.

Claim 9 is indefinite since the last step is quenching the melted frit cakes, but the heating step would not produce melted frit cakes. It is noted that the specification teaches the heating step forms fused frit cakes, which are different from melted frit cakes. Claim 9 recites the

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limitation "the melted frit cakes" in line 11. There is insufficient antecedent basis for this limitation in the claim.

Claim 11 is indefinite since it is unclear what is preferably aspect of the furnace, that it is gas-heated, that is a drip-feed crucible furnace or both.

Regarding claim 13, the phrase "preferably" renders the claim indefinite because it is unclear whether the size limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim 14 recites the limitation "the fusing" and the "granulated material. There is insufficient antecedent basis for this limitation in the claim or in claim 8, from which it depends.

Claim 15 is indefinite since it is unclear as to how the potassium oxide content sets the value of TEC.

Claim 16 recites the limitation "the baking temperature". There is insufficient antecedent basis for this limitation in the claim or in claim 8, from which it depends. In addition, it is unclear as to how the proportions of boron oxide, lithium oxide and sodium oxide control the baking temperature. Regarding claim 16, the phrase "preferably" renders the claim indefinite because it is unclear whether the temperature following the phrase are part of the claimed invention. See MPEP § 2173.05(d). Finally, claim 8 does not include lithium oxide and boron oxide, thus this claim is improperly dependent on claim 8.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by U.S. patent 5,702,514.

Example 9 in table IV teaches an opalescent glass ceramic comprising silica, alumina, phosphorus oxide, sodium oxide, potassium oxide, 1.25 wt% CaO and 0.5 wt% MnO₂. This glass ceramic falls within the composition of claim 1.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 5,702,514.

As stated above, this reference teaches the claimed glass ceramic. The taught MnO₂ acts as a colorant. Column 11, lines 63-66 teach other colorants and states that they are interchangeable, depending on the desired color. Thus one of ordinary skill in art would have found it obvious to replace MnO₂ with one of the other oxides taught in column 11, lines 63-66, such as CeO₂ or SnO₂. If one replaces MnO₂ with CeO₂, then column 11, lines 51-52 teaches the glass ceramic has a fluorescent property. The resulting glass ceramic suggests that claimed.

Claims 1-4, 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 6,120,591.

This reference teaches opalescent glass ceramics having a TEC in the range of about $11-19 \times 10^{-6}/K$ comprising 40-65 wt% silica, 6-13 wt% alumina, 0-3 wt% P₂O₅, 0.5-4 wt% boron oxide, 1-3 wt% lithium oxide, 6-12 wt% sodium oxide, 5-15 wt% potassium oxide, 0-7 wt% MgO, 0.8-2.5 wt% CaO, 0-2 wt% BaO, 0.1-0.8 wt% CeO₂, where the total amount of lithium

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and sodium oxides is 6-15 wt% and the total amount of phosphorus and boron oxides is 0.5-4 wt%. Since the composition contains cerium oxide, it has a fluorescent property. The taught composition and TEC overlap the claimed ranges. Product claims with numerical ranges which overlap prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191 USPQ 90 (CCPA 1976); *In re Malagari* 182 USPQ 549 (CCPA 1974); *In re Fields* 134 USPQ 242 (CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960). The reference suggests the claimed glass ceramic.

Claims 1-4, 6-8 and 10-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 6,200,137 or 6,280,863.

Both of these patents teach opalescent glass ceramics having a TEC in the range of about $6-12 \times 10^{-6}/K$ comprising 45-70 wt% silica, 5-22 wt% alumina, 0.5-6.5 wt% P_2O_5 , 0-8 wt% boron oxide, 0-5 wt% lithium oxide, 4-13 wt% sodium oxide, 3-8.5 wt% potassium oxide, 0-5 wt% MgO, 1.5-11 wt% CaO, 0-5 wt% BaO and 0-3 wt% CeO_2 . Since the composition contains cerium oxide, it has a fluorescent property. The taught glass ceramic has a fusing or baking temperature in the range of 650-1050°C. The taught composition, TEC and fusing or baking temperature overlap the claimed ranges. Product claims with numerical ranges which overlap prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191 USPQ 90 (CCPA 1976); *In re Malagari* 182 USPQ 549 (CCPA 1974); *In re Fields* 134 USPQ 242 (CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960). The glass ceramic is produced by weighting and mixing the taught oxides, melting the oxide mixture, water quenching the melt, grinding the obtained frit in a conventional mill, tempering the frit, grinding the tempered frit and sieving the resulting powder to obtain a powder having a particle size in the range of 5-80

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micron, which overlaps the claimed sieve size range. While the references do not teach the apparatus of claims 10-12, these apparatus limitations are not given any weight since they do not affect the process in a manipulative sense. Apparatus limitations, unless they affect the process in a manipulative sense, have little weight in process claims. *In re Tarczy-Hornoch* 158 USPQ 141, 150 (CCPA 1968); *In re Edwards* 128 USPQ 387 (CCPA 1961); *Stalego v. Heymes* 120 USPQ 473, 478 (CCPA 1959); *Ex parte Hart* 117 USPQ 193 (PO BdPatApp 1957); *In re Freeman* 44 USPQ 116 (CCPA 1940); *In re Sweeney* 72 USPQ 501 CCPA 1947).

The references suggest the claimed glass ceramic and process.

Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

There is not teaching or suggestion in the cited art of record of a glass ceramic having the claimed composition.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa Koslow whose telephone number is (571) 272-1371. The examiner can normally be reached on Monday-Friday from 8:00 AM to 3:30 PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo, can be reached at (571) 272-1233.

The fax number for all official communications is (571) 273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cmk
June 2, 2006



C. Melissa Koslow
Primary Examiner
Tech. Center 1700